CLAIMS

That which we claim is:

1. A method of purging cells related to a pathology from a biological sample, said method comprising (i) obtaining a biological sample from a mammal, wherein the biological sample is suspected of containing cells related to the pathology; and (ii) contacting the biological sample with a medium comprising NK-92 or modified NK-92 natural killer cells, wherein the modified NK-92 cells have been modified by a physical treatment or by transfection with a vector; whereby the natural killer cells purge cells related to the pathology from the sample.

2. The method described in claim 1 wherein the pathology is a cancer.

3. The method described in claim 1 wherein the pathology is an infection by a pathogenic virus.

4. The method described in claim 3 wherein the pathogenic virus is human immunodeficiency virus, Epstein-Barr virus, cytomegalovirus, or herpes virus.

5. The method described in claim 1 wherein the biological sample is human blood or bone marrow.

6. The method described in claim 1 wherein the natural killer cell is immobilized on a support.

7. The method described in claim 1 wherein the modified NK-92 cells have been modified by a physical treatment that renders them non-proliferative, said treatment not significantly diminishing their cytotoxicity, by treatment that inhibits expression of HLA antigens on the NK-92 cell surface, by transfection with a vector, or by any combination thereof.

8. The method described in claim 7 wherein the cells have been transfected with a vector encoding a cytokine that promotes the growth of the cells, a vector encoding a protein that is responsive to an agent, a vector encoding a cancer cell receptor molecule, or with any combination thereof.

9. The method described in claim 1 wherein the medium further comprises cytokine that promotes the growth of the cells.

10. A method of treating a pathology ex vivo in a mammal comprising the steps of:

(i) obtaining a biological sample from the mammal, wherein the sample is suspected of containing cells related to the pathology;

(ii) contacting the biological sample with a medium comprising NK-92 or modified NK-92 natural killer cells, wherein the modified NK-92 cells have been modified by a physical treatment or by transfection with a vector, whereby the cells related to the pathology in the sample are selectively destroyed, thereby producing a purged sample; and

(iii) returning the purged sample to the mammal.

11. The method described in claim 10 wherein the pathology is a cancer.

12. The method described in claim 11 wherein the cancer is a leukemia, a lymphoma or a multiple myeloma.

13. The method described in claim 10 wherein the pathology is an infection by a pathogenic virus.

14. The method described in claim 13 wherein the pathogenic virus is human immunodeficiency virus, Epstein-Barr virus, cytomegalovirus, or herpes virus.

15. The method described in claim 10 wherein the biological sample is blood or bone marrow and wherein the mammal is a human.

16. The method described in claim 10 wherein the natural killer cell is immobilized on a support.

17. The method described in claim 10 wherein the medium comprises modified NK-92 cells which have been modified by a physical treatment that renders them non-proliferative, said treatment not significantly diminishing their cytotoxicity, by treatment that inhibits expression of HLA antigens on the NK-92 cell surface, by transfection with a vector, or by any combination thereof.

18. The method described in claim 17 wherein the cells have been transfected with a vector encoding a cytokine that promotes the growth of the cells, a vector encoding a protein that is responsive to an agent, a vector encoding a cancer cell receptor molecule, or with any combination thereof.

19. The method of treating a cancer described in claim 10 wherein the medium further comprises a cytokine that promotes the growth of the cells.

20. A method of treating a pathology *in vivo* in a mammal comprising the step of administering to the mammal a medium comprising NK-92 or modified NK-92 natural killer cells, wherein the modified NK-92 cells have been modified by a physical treatment that renders them non-proliferative, said treatment not significantly diminishing their cytotoxicity, by treatment that inhibits expression of HLA antigens on the NK-92 cell surface, by transfection with a vector, or by any combination thereof.

21. The method described in claim 20 wherein the modified NK-92 cells have been transfected with a vector encoding a cytokine that promotes the growth of the cells, with a vector encoding a protein that is responsive to an agent, a vector encoding a cancer cell receptor molecule, or with any combination thereof.

22. The method described in claim 20 wherein the pathology is a cancer.

23. The method of treating a cancer described in claim 22 wherein the cancer is a leukemia, a lymphoma or a multiple myeloma.

24. The method described in claim 20 wherein the pathology is an infection by a pathogenic virus.

25. The method described in claim 24 wherein the pathogenic virus is human immunodeficiency virus, Epstein-Barr virus, cytomegalovirus, or herpes virus.

26. The method of treating a pathology described in claim 20 wherein the route of administration of the cells to the mammal is intravenous and the mammal is a human.

27. The method of treating a pathology described in claim 20 further comprising administering a cytokine that promotes the growth of the cells to the mammal in conjunction with administering the medium comprising the natural killer cell.

28. The method of treating a pathology described in claim 26 wherein the NK-92 is modified by transfection with a vector encoding a protein that is responsive to an agent such that when the agent is taken up by the cell, the cell is inactivated, and wherein the method further comprises administering to the mammal, after a time sufficient for the natural killer cell to treat the cancer has elapsed, an amount of the agent effective to inactivate the cell.

29. The method of treating a pathology described in claim 28 wherein the agent is acyclovir or gancyclovir.